

### Claims

1. A damping device, in particular for cable-stayed  
5 bridges (2), comprising a differential cylinder (14),  
a tank (20), two hydraulic units (22, 24), a  
hydraulic accumulator (42), and an electric motor  
(26) associated to the hydraulic units (22, 24),  
characterized in that a hydraulic unit (22) is  
10 arranged in the pressure medium flow path between the  
tank (20) and a piston rod-side ring chamber (32) and  
the second hydraulic unit (24) in the pressure medium  
flow path between the ring chamber (32) and a  
cylinder chamber (34).  
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2. The damping device in accordance with claim 1,  
characterized in that the hydraulic units (22, 24)  
each have a variable displacement volume.
- 20 3. The damping device in accordance with claim 1 or 2,  
characterized in that the electric motor (26) drives  
the hydraulic units (22, 24).
4. The damping device in accordance with claim 2,  
25 characterized in that a pressure transducer for  
measuring a pressure prevailing in the ring chamber  
(32) and/or in the cylinder chamber (34) is provided  
for adjusting the pivoting angles or displacement  
volumes of the hydraulic units (22, 24).  
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5. The damping device in accordance with claim 2,  
characterized in that in the cylinder chamber (34)  
and/or in the range of the hydraulic accumulator (42)  
a pressure transducer is provided for measuring an  
35 accumulator pressure and the accumulator charge of

the hydraulic accumulator (42) and for adaptation to the static load.

- 5 6. The damping device in accordance with any one of the preceding claims, characterized in that the electric motor (26) is adapted to be driven through the intermediary of at least one of the hydraulic units (22, 24) and thus may be utilized as a generator.
- 10 7. The damping device in accordance with any one of the preceding claims, characterized in that in the quasi-static condition a pressure approximately twice as high as in the ring chamber (22) prevails in the cylinder chamber (24).
- 15 8. The damping device in accordance with any one of the preceding claims, characterized in that the piston (16) of the differential cylinder (14) is fixedly mounted, and the cylinder jacket (18) of the  
20 differential cylinder (14) is guided in an axially displaceable manner.
- 25 9. The damping device in accordance with any one of claims 1 to 7, characterized in that the cylinder jacket (18) of the differential cylinder (14) is fixedly mounted, and the piston (16) of the differential cylinder (14) is guided in an axially displaceable manner.
- 30 10. The damping device in accordance with claim 1, characterized in that the hydraulic accumulator (42) is integrated into the differential cylinder (14).
- 35 11. The damping device in accordance with any one of the preceding claims, characterized in that the ring chamber (32) is sealed against the external

environment (62) and/or against the cylinder chamber (34) through the intermediary of a gap seal (48, 82).

- 5      12. The damping device in accordance with claim 11, characterized in that the gap seal (48, 82) is formed by an annular gap (58, 84) between piston-side surfaces (50, 54) and cylinder jacket-side surfaces (52, 56).
- 10     13. The damping device in accordance with claim 12, characterized in that beyond a leakage port (60), the annular gap (58) is sealed against the external environment (62) through the intermediary of at least one sealing member (80, 110).

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